

ABSTRACT

An improvement to a spread-spectrum code-division-multiple-access system, using a channel sounding signal from a base station (BS) to provide initial transmitter power levels for remote stations (RS). The base station has a BS-spread-spectrum transmitter for transmitting BS-spread-spectrum signals at a first frequency and a BS-spread-spectrum receiver for receiving RS-spread-spectrum signals at a second frequency. The RS-spread-spectrum signals are transmitted by the remote stations at the second frequency. The BS-spread-spectrum signals at the first frequency are outside the correlation bandwidth of the RS-spread-spectrum signals at the second frequency. The base station has a BS transmitter for transmitting a BS-channel-sounding signal at the same carrier frequency being used by the remote stations to transmit a spread-spectrum signal to the base station. The bandwidth of the BS-channel-sounding signal is much of the bandwidth of the BS-spread-spectrum signal. Each of the remote stations has an RS receiver, for receiving the BS-channel-sounding signal at the second frequency. Each RS receiver includes an RS demodulator for tracking the BS-channel-sounding signal and outputting an RS-receiver signal, and an RS-power-level circuit. In response to the RS-receiver signal, the RS-power-level circuit adjusts the initial RS-power level. The base station has an interference-reduction subsystem, located at a front end to the BS-spread-spectrum receiver. The

interference-reduction subsystem reduces the BS-channel-sounding signal, transmitted from the base station, from the RS-spread-spectrum signal arriving at the base station.

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